IN THE CLAIMS:

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- 1. An apparatus for measuring current flow through a living body, comprising:
 data acquisition circuitry consisting of a first contact and a second contact to
 generate voltage data; and
- a portable data processing unit connected to said data acquisition circuitry to process said voltage data to produce current flow data.
- The apparatus of claim 1 wherein said portable data processing unit includes
 acquired data conditioning circuitry to condition a data signal from said first contact and said second contact.
 - 3. The apparatus of claim 2 wherein said acquired data conditioning circuitry includes an amplifier.

4. The apparatus of claim 1 wherein said portable data processing unit includes

- 5. The apparatus of claim 4 further comprising a keypad connected with said data20 input interface circuitry.
 - 6. The apparatus of claim 1 further comprising an autonomous power source.
- 7. The apparatus of claim 1 wherein said portable data processing unit includes data output interface circuitry.
 - 8. The apparatus of claim 7 further comprising a visual display connected to said data output interface circuitry.
- 30 9. The apparatus of claim 7 further comprising a compact removable flash memory card connected to said data output interface circuitry.

data input interface circuitry.

- 10. The apparatus of claim 1 wherein said portable data processing unit includes a central processing unit and a memory storing a set of executable programs.
- 11. The apparatus of claim 10 wherein said memory stores body impedance data comprised of known body impedances.
 - 12. The memory of claim 11 wherein said known body impedances include estimated impedances.
- 10 13. The memory of claim 11 wherein said known body impedances include calculated impedance measurements.
- 14. The apparatus of claim 10 wherein said memory stores a parameter calculator that compares conditioned data with known body impedances to generate data on said15 current flow through said living body.
 - 15. The apparatus of claim 10 wherein said memory stores an output module that controls data storage to a removable flash memory.
- 20 16. The apparatus of claim 10 wherein said memory stores an output module that controls the menu of an LCD display.